Jie Bao

Personal Information

Address:	7950 rue Rostand, Brossard, J4X 2R6, Quebec, Canada
Phone:	(438) 995-4178
website/ email:	jiebao.ca/ jiebao995@gmail.com

Education

Summer 2019 - Winter 2021	**Concordia University**, Montreal, Quebec, Canada Thesis: Machine Learning Techniques for Turbulence Modeling *Master of Applied Science*, GPA: 4.0/4.3 Applied Machine Learning - COMP551 (McGill Campus IUT), *Grade: A*
Fall 2015 - Winter 2019	**Concordia University**, Montreal, Quebec, Canada *Bachelor of Engineering, Aerospace Engineering* *Engineer Apprentice*, **Bombardier Aerospace**

Computer Skills

Python, Tensorflow, Matlab, Tableau, CSS/Javascript, SQL, C++, MS Office, Catia, Ansys

Work Experience

Current	**Graduate Student Researcher**, Computational Aerospace Lab *Turbulence Modeling Technique using Machine Learning Techniques* Performed feature quality analysis using algorithm such as Relief. Data cleaning, acquisition and analysis using Matlab and Python. Created an end-to-end ML training pipeline for turbulent production and dissipation values. Achieved over 90% R^2 accuracy. Currently, working on analysing the NACA 0012 airfoil. Check out the progress on website and my other works.
Summer 2018	**R&D Intern in Advanced Systems**, Bombardier Aerospace *Hydraulic System Modeling using MBSE* Improved the design approach using model-based system engineering for the GLOBAL 7500 hydraulic system using the CAPELLA software (operational architecture down to physical architecture). The approach proved to expose design problems early in the preliminary phase and allows collaboration between the many engineering disciplines. I gained a comprehensive understanding of the hydraulic system. Presented to subject-matter experts during bi-weekly workshops.
Summer 2017	**Intern in Structure Design & Standard**, Bombardier Aerospace *Cabin Window Trade Study on Next-Gen Business Jet* Conduct a cabin window trade study with respect to § 25.807 for future business jet program, perform cost & weight estimation for Product Planning, benchmark with competition in the same aircraft segment, proposed cabin window position, installation type, and size recommendation.

Certificate Scholarships

May 2016	Aircraft Familiarization Training (312h) at L'École National d'Aérotechnique
September 2020	Concordia University Merit Scholarship
September 2021	Concordia University Merit Scholarship

Teaching Assistant

Current

AERO 490 - Final Year Capstone Aerospace Engineering Design Project
Supervised by Dr. Jonathan Liscouët

In this role, I assist weekly design reviews alongside the professor (Dr. Liscouet) and it is my responsibility to oversee the design process of the senior students. So far, I have mentored over 25 students during office hours. I guided an industry-standard design approach (ARP 4754) and I shared my engineering best practices. The experience has shown me how systematic methodologies can improve student's confidence in their own design choices and the mentorship further nourished the teacher in me. I also took the initiative to invite guest lecturers from the industry. For example, I organized a panel where Richard Tremblay, the president of CADO, was invited to discuss the operational challenges of an organ transporting drone.

Academic Project

2018-2019

AERO 490 - Final Year Capstone Aerospace Engineering Design Project
Supervised by Dr. Catharine Marsden

Conceptual design of an arctic transport aircraft. Market analysis and develop business case. Perform trade studies and constraint diagram. Aircraft static & dynamic stability compliance for airworthiness.

Fall 2017

AERO 390 - Preliminary Rudder System Design
Supervised by Dr. Susan Liscouët-Hanke

Perform the safety and reliability assessment - ARP 4761. Define Aircraft and System level requirements using interdisciplinary approach - RFLP method. Use 3DExperience software to track the requirements and to model the rudder system physical level.

Engineering Competition

Fall 2018

Engineering and Computer Science Association Competitions Week
Senior Design - Concordia University, Montreal, QC

Designed and assembled a remotely controlled car using an Arduino board and other provided material. Awarded 3rd position.

Languages

French:, English:, Chinese (Mandarin):	Fluent
German:	Basic Knowledge

Interests and Activities

World History, Current World Affairs, Avid Tennis player, Running, Programming